

# Effect of thermal treatment on the electrical and thermal conductivity of the graphene oxide

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The excellent properties of graphene have attracted a large interest in the field of material science [1]. The incorporation of graphene sheets can enhance material performance in order to obtain exceptional properties and manufacture next generation materials. The graphene oxide (GO) is an excellent candidate to be blended with matrices of different nature due to its high content in oxygenated functional groups, however at the same time, these functionalities make GO an insulating material.

In this work a study of the electrical and thermal conductivity of the graphene oxide after thermal treatments at different temperatures is presented [2]. An extensive characterization has been carried out in order to understand in depth the changes in the structure that occur when reducing the GO by thermal treatment. On the other hand, different thicknesses of GO coatings have been analyzed in order to study the impact of the number of layers on the electrical and thermal conductivity.

## References

- [1] Xiao Huang, Xiaoying Qi, Freddy Boey and Hua Zhang Chem. Soc. Rev., **41**, (2012) 666  
 [2] J. D. Renteria, S. Ramirez, H. Malekpour, B. Alonso, A. Centeno, A. Zurutuza, A.I. Cocemasov, D.L. Nika and A.A. Balandin, Adv. Funct. Mater. **25**, (2015) 4664

## Figures

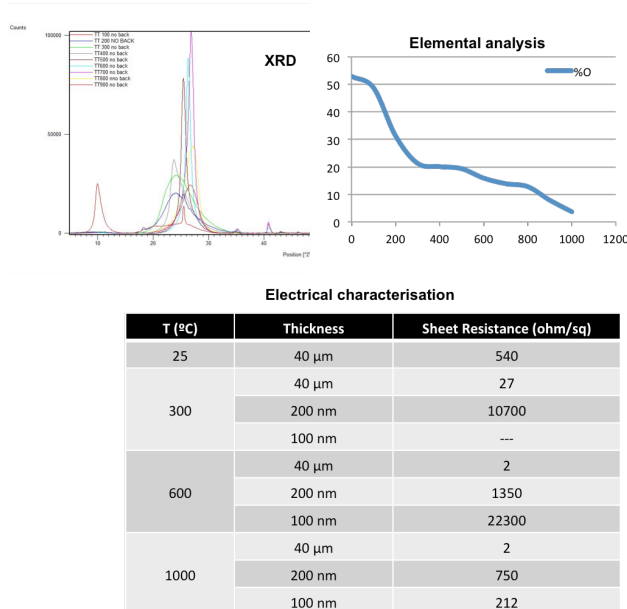


Figure 1: XRD, oxygen content and electrical characterization of the thermally treated graphene oxide